

## MATH F113X: Homework 2

- Answer the following problems from the Voting Theory section (p.53):  
# 3def, 6def, 12, 13-16, 18, 24ab\*, Problem A
- Answer the following problems from the Weighted Voting section (p.70):  
# 2, 4, 5, 6, 10

\*Problem 24b refers to the Pareto Criterion. A description of this criterion is in problem 23. It is also copied below.

Pareto Criterion: If **every** voter prefers candidate A to candidate B, then B should not be the winner.

### **Problem A:**

- (1) Explain Arrow's Impossibility Theorem in your own words in such a way that a typical adult could understand it.
- (2) The President of the United States is elected by the Electoral College. Now that you have learned a lot about voting schemes, what scheme would **you** choose to elect the President of the United States and why? (A short paragraph is sufficient even though we all know entire books can be written on this topic!)
- (3) How has learning about voting schemes changed your view of voting and elections?

Remember to write up your homework solutions according to the homework writeup guidelines. Confirm your work is correct or fix your errors before you submit it. Homework must be submitted on Gradescope.

### **Rubric:**

**2 points:** You provided a complete answer, with supporting work, written up clearly

**1 point:** Some attempt at a solution, but incomplete writeup / unclear / illegible / no answer

**1 point:** Only an answer, with no supporting work

**0 points:** Missing.